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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/691,700	10/24/2003	Charles W. Propst JR.	APV31437A	6803
7590 08/23/2007 Stevens, Davis, Miller & Mosher, L.L.P. Suite 850 1615 L Street, N.W. Washington, DC 20036			EXAMINER CORDRAY, DENNIS R	
			ART UNIT 1731	PAPER NUMBER
			MAIL DATE 08/23/2007	DELIVERY MODE PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/691,700

Applicant(s)

PROPST ET AL.

Examiner

Dennis Cordray

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 18 June 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 48-64 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 48-64 is/are rejected.
- 7) ☒ Claim(s) 53 and 54 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date <u>6/18/2007</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 6/18/2007 has been entered.

Response to Arguments

Applicant's amendments, filed 6/18/2007, have overcome the rejection(s) of claim(s) 48-64 under 35 U.S.C. 103(a) over Westman et al (WO 02/25013 A1) in view of others. Therefore, the rejections have been withdrawn. However, upon further consideration, new grounds of rejection are made as detailed below.

Claim Objections

Claims 53-54 are objected to because of the following informalities:

Claim 53 contains a duplicate word "a" in the first line.

In Claim 54, the words "of any" in the first line are meaningless and should be removed. Appropriate correction is required.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 48-54, 56-57 and 60-64 are rejected under 35 U.S.C. 103(a) as being unpatentable over Propst, Jr. (5858173) in view of Carlson (2726230) and Lindgren et al (5603997).

Claims 48-49, 51-52, 54, 56 and 60: Propst Jr. discloses a paper stock composition comprising more or less 3-20% of the stock by weight of a recyclable plastic composition (RPC) comprising and admixture of JONCRYL 61LV[®], JONCRYL 82[®] and JONCRYL 28[®] in the ratio of 15:65:6, with each proportion variable up to 10%. In another embodiment, the proportions of JONCRYL 61LV[®], JONCRYL 82[®] can vary up to 20% and JONCRYL 28[®] is omitted. The components JONCRYL 61LV[®], JONCRYL 82[®] are commercially available acrylic compositions comprising from 34 to 40% solids and are recited as suitable acrylic acid containing compositions in the instant Specification (p 8, last par bridging to p 9; p 21, last par, RPC-2 composition). Additional components of the admixture are ammonium hydroxide and zinc oxide, which is disclosed as a crosslinking agent for JONCRYL 82[®] (col 3, line 3 to col 4, line 7). Using the solids content, the amount of acrylic acid solids added to the stock can be calculated from 18.7 to 124.4 dry lb/ton (from 3.1 - 20.4 lb/ton of JONCRYL 61LV[®] and from 15.6 to 104 lb/ton of JONCRYL 82[®]), which encompasses the claimed

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composition. Propst Jr. discloses that a wide range of RPC content is usable. Propst Jr. further discloses that sizing agents can be incorporated into the RPC (col 5, lines 31-32). Both virgin and recycled wood fibers are disclosed (col 1, lines 24-30; col 5, lines 33-38; Claim 5).

Propst Jr. does not disclose the use of alkyl ketene dimer (AKD) or alkylene succinic anhydride (ASA). Propst Jr. also fails to disclose the claimed crosslinking agents.

Lindgren et al discloses packaging material, board or paperboard comprising cellulose reactive sizing agents AKD, ASA or a combination of the two to make the packaging material particularly repellent to aggressive liquids (Abs; col 8, lines 56-63). In an example, Lindgren et al discloses adding 1-3 kg (2.2-6.6 lb) of AKD per ton of pulp (col 12, lines 20-28, Example V).

Carlson discloses polyvalent metallic oxides well known in the art as crosslinking agents for acrylic containing polymers (col 1, lines 63-72 and col 2, lines 1-22). Specific examples given are oxides of zinc, calcium, magnesium, tin, titanium, and aluminum (col 6, lines 67-75).

The art of Propst Jr., Carlson, Lindgren et al and the instant invention is analogous as pertaining to paper or board comprising AKD and ASA as sizing agents and to crosslinking acrylic compositions. It would have been obvious to one of ordinary skill in the art to use the claimed amount of AKD, ASA or a mixture of both in the papermaking composition of Propst Jr. in view of Carlson and Lindgren et al to make the packaging material particularly repellent to aggressive liquids. Alternatively, AKD and

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ASA are both well known sizing agents and Lindgren et al discloses their use in board or packaging materials. "It is prima facie obvious to combine two compositions each of which is taught by the prior art to be useful for the same purpose, in order to form a third composition to be used for the very same purpose... [T]he idea of combining them flows logically from their having been individually taught in the prior art." In re Kerkhoven, 626 F.2d 846, 850, 205 USPQ 1069, 1072 (CCPA 1980). It would also have been obvious to use any of the polyvalent metal oxides taught by Carlson as a functionally equivalent crosslinking agent known in the art. Note that the open language of the claims does not preclude additional additives as disclosed by Lindgren et al.

Claims 50, 53, 57 and 62: Propst Jr. does not disclose the addition of a starch or a polymerizable cationic composition. Lindgren et al discloses that the paper or board comprises other additives known to be used in papermaking, including sizing agents, dry and wet strength agents and retention agents (col 7, lines 18-36). Suitable retention agents are polysaccharides, such as starch, polydimethyl diallyl ammonium chloride (poly-DADMAC) and polyethyleneimine (col 7, lines 51-56). The latter two are cationic polymers (construed by the Examiner to be polymerizable cationic compositions). It would have been obvious to one of ordinary skill in the art to incorporate a retention agent or strength agent in the stock as a typical additive known in the art.

Claim 61: Propst, Jr. et al discloses making linerboard and medium and teaches that Kraft stock is also particularly used in container making, thus would have also been obvious (col 1, lines 1-13; col 4, lines 56-59).

Claims 63-64: Propst Jr. discloses a method of making paper by adding the RPC to the furnish (col 2, lines 9-13). A papermaking furnish typically comprises an excess (99.5%) of water, thus it would have been obvious to one of ordinary skill in the art to use an excess of water as a typical papermaking process (col 1, lines 24-29).

Claim 55 is rejected under 35 U.S.C. 103(a) as being unpatentable over Propst Jr. in view of Carlson and Lindgren et al, as applied to claims 48-54, 56-57 and 60-64 above, and further in view of Dumas (4522686).

Propst Jr. in view of Carlson and Lindgren et al do not disclose specific alkyl ketene dimers.

Lindgren et al teaches that AKD is produced using saturated and unsaturated fatty acids, thus the dimers have saturated or unsaturated hydrocarbon chains.

Dumas discloses aqueous sizing compositions comprising a ketene dimer as a hydrophobic cellulose reactive sizing agent (Abstract). Specific examples given of the dimer include octyl, decyl, dodecyl, tetradecyl, hexadecyl, octadecyl, eicosyl, docosyl, tetracosyl, phenyl, benzyl, beta-naphthyl and cyclohexyl ketene dimers, ketene dimers prepared by known methods from montanic acid, naphthenic acid, $\Delta^{9,10}$ -decylenic acid, $\Delta^{9,10}$ -dodecylenic acid, palmitoleic acid, oleic acid, ricinoleic acid, linoleic acid, and eleostearic acid, as well as ketene dimers prepared from naturally occurring mixtures of fatty acids (col 4, lines 32-47).

The art of Propst Jr, Carlson, Lindgren et al, Dumas and the instant invention are analogous as pertaining to compositions containing polymers comprising acrylic acid

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compositions and AKD sizes. It would have been obvious to one of ordinary skill in the art at the time of the invention to use the claimed alkyl ketene dimers in the composition of Propst Jr. in view of Carlson and Lindgren et al and further in view of Dumas as well known and functionally equivalent options.

Claim 58 is rejected under 35 U.S.C. 103(a) as being unpatentable over Propst Jr. in view of Carlson and Lindgren et al, as applied to claims 48-54, 56-57 and 60-64 above, and further in view of Bailey et al (5885340).

Propst Jr. in view of Carlson and Lindgren et al do not disclose using a cationic alkyl ketene dimer.

Bailey et al discloses a paper sized with an alkyl ketene dimer wherein the alkyl group has 8-20 carbon atoms (col 3, lines 15-28), a starch adhesive (col 3, lines 35-41) and an acrylic acid (col 4, lines 19-27). Bailey et al teaches that cationic alkyl ketene dimer is a commercially available product, AQUAPEL[®] C519, from Hercules Corporation (col 6, lines 55-57).

The art of Propst Jr, Carlson, Lindgren et al and the instant invention are analogous as pertaining to sizing compositions. One of ordinary skill in the art would have been aware of available alkyl ketene dimers and it would have been obvious at the time of the invention to use a commercially available cationic alkyl ketene dimer in the composition of Propst Jr. in view of Carlson and Lindgren et al and further in view of Bailey et al as well known and functionally equivalent option.

Allowable Subject Matter

Claim 59 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter: the nearest prior art, Propst Jr. and Lindgren et al, do not disclose a cationic acrylic acid containing material. While cationic polymers containing acrylic acid monomers are known in prior art as retention aids, they are used in much lower amounts than claimed in the instant invention. There is no disclosure in prior art of adding cationic acrylic acid containing material in the claimed amount to a papermaking stock and using such a large amount of the material would not have been obvious to one of ordinary skill in the art.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dennis Cordray whose telephone number is 571-272-8244. The examiner can normally be reached on M - F, 7:30 -4:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Steven Griffin can be reached on 571-272-1189. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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